

# Domino's Pizza Data Analysis Project

## 1. Business Statement

Domino's Pizza operates in a highly competitive food industry where customer preferences, sales trends, and ingredient usage play a crucial role in business growth. By analyzing sales data, ingredient usage, and revenue trends, we can optimize pricing strategies, inventory management, and customer satisfaction, leading to increased profitability and efficient operations.

## 2. Business Problem

### Challenges Faced by Domino's:

1. **Identifying Best-Selling & Least-Selling Pizzas:**
  - Determining which pizzas contribute the most to revenue.
  - Identifying underperforming pizzas to optimize the menu.
2. **Revenue Optimization & Pricing Strategy:**
  - Understanding how different pizza sizes impact total revenue.
  - Finding the most profitable pizza category and size.
3. **Ingredient Usage & Inventory Management:**
  - Determining the most and least frequently used ingredients.
  - Preventing ingredient shortages and minimizing waste.
4. **Peak Order Hours & Sales Trends:**
  - Identifying the busiest hours for optimized staff scheduling.
  - Analyzing sales trends by day, month, and time.
5. **Customer Demand & Personalization:**
  - Understanding customer preferences based on purchase behavior.
  - Recommending personalized offers based on sales data.

## 3. Business Solutions Provided

### A. Sales Performance & Revenue Optimization

- **Total Sales:** \$817,860 indicates a strong revenue performance.
- **Total Orders:** 49,574 reflects a high volume of transactions.
- **Average Order Value (AOV):** \$16.50 is the typical spend per order, which could be optimized further.

- Identified the **most profitable pizza** as **Thai Chicken Pizza (L)**, which could be leveraged for promotions or bundling strategies.
- Determined the **least profitable pizza** as **Brie Carre Pizza (XXL)**, signaling a need to revisit pricing or marketing for this category.
- **Top-Selling Pizzas:**
  - **Thai Chicken Pizza:** 43,434 sales
  - **Barbecue Chicken Pizza:** 42,766 sales
  - **California Chicken Pizza:** 41,410 sales
  - These are the favorites among customers and can be promoted as flagship items.

## B. Ingredient Usage & Inventory Insights

- **Most Used Ingredients:** Pepperoni, mushrooms, red onions, and bacon are the most frequently used, emphasizing their popularity.
- **Inventory Adjustments:** Recommend ensuring high availability of these ingredients while reducing storage for less-used ones.

## C. Peak Sales Hour Analysis

- **12 PM** is identified as the peak sales hour, suggesting lunchtime is the busiest period for orders.
- **Busiest Day:** Weekends drive the highest sales, requiring optimized staffing and promotions.
- **Slowest Sales Period:** Early mornings and late nights see fewer orders, indicating opportunities for targeted promotions.

## D. Pizza Size & Type Analysis

- **Most Popular Pizza Size:** Large (L) at **46% of total sales**.
- **Smaller sizes (M and S)** contribute significantly, while **XXL constitutes a negligible share**.
- **Pizza Type Sales:**
  - **Classics & Supreme pizzas dominate sales**, followed by Chicken and Veggie categories.
  - Indicates demand for a mix of traditional and contemporary flavors.

## E. Customer Segmentation & Personalization

- **Customized Offers:** Personalized promotions based on customer purchase behavior.
- **Upselling Opportunities:** Recommend upselling options for smaller sizes (M and S) to maximize revenue.
- **Loyalty & Retention:** Offering discounts for repeat customers can improve long-term customer engagement.

## 4. Key Insights from the Analysis

### ◆ Sales & Profitability Insights

- **The most profitable pizza is Thai Chicken Pizza (L)**, making it a strong promotional candidate.
- **The least profitable pizza is Brie Carre Pizza (XXL)**, suggesting a need for strategic pricing adjustments.
- **Large pizzas contribute the highest revenue**, while **XXL pizzas have minimal impact on sales**.

### ◆ Ingredient & Inventory Insights

- **Tomatoes, Red Onions, Red Peppers, Mozzarella Cheese, Garlic, Green Olives, Cheese, Spinach, Feta Cheese, Peppers** are the most frequently used ingredients.
- **Olives & Jalapeños** are among the least used, indicating potential cost-saving opportunities.

### ◆ Peak Sales Trends

- **Peak ordering hour:** 12 PM (Lunchtime rush).
- **Busiest day:** Friday (Highest number of orders and revenue).
- **Slowest sales on Sunday**, indicating an opportunity for promotions.

### ◆ Customer Behavior & Preferences

- **Classics & Supreme pizzas dominate sales**, followed by Chicken and Veggie pizzas.
- **Customers prefer Large pizzas the most**, making them a key focus for marketing.
- **Promotions should focus on top-selling pizzas and bundle deals to increase AOV.**

## 5. Conclusion & Recommendations

### Key Recommendations:

1. **Menu Optimization:** Discontinue or revamp least profitable XXL pizzas.
2. **Dynamic Pricing Strategy:** Adjust pricing strategies for Large pizzas to maximize revenue.
3. **Inventory Adjustments:** Ensure adequate stock of frequently used ingredients while reducing excess storage for low-demand items.
4. **Targeted Promotions:** Focus marketing efforts around **12 PM peak sales hour** and **weekends**.

